



Merothripidae from Malaysia: *Merothrips* with one new species and two new species records

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Abstract. The family Merothripidae is recorded for the first time from Malaysia. Three species of *Merothrips*, the largest genus in the family, are recorded here, with the description of *Merothrips yii* sp.n.

Key words: Thysanoptera, family, key to species, first records

Introduction

The Merothripidae is a family of small to minute thrips found on dead twigs and in leaf litter, and that presumably feed on fungal-hyphae. Three genera are recognised within this family, comprising a total of 16 species excluding fossil species (ThripsWiki 2018). The single species in *Damerothrips*, and most of the 14 species of *Merothrips*, are known only from the Neotropics. However, the single species in *Erotidothrips* and two of the species in *Merothrips*, are distributed widely around the world. A key to the genera and world species then recognised in this family was provided by Mound and O'Neill (1974). Membership of the family is recognised by the presence in females of a pair of lobes each bearing two setae on the posterior margin of sternite VII. These lobes are interpreted as remnants of the seventh sternite (Mound *et al.* 1980). Sexual dimorphism is common in this family, and males have enlarged fore legs and the dorsal surface of the head developed into a large glandular area (Moritz 1984). The species in the two monobasic genera are more robust than the species of *Merothrips*. Both of them have 9-segmented antennae and a rectangular pronotum without lateral sutures (Mound & Morris 2004), and in *Erotidothrips* the head and pronotum bear numerous setae in contrast to *Damerothrips*.

Key to *Merothrips* species from Malaysia

1. Antennal segments III and IV with sensorium discoidal at external apex (Fig. 10); antennal segment III 2.5 times as long as wide; pronotum with two pairs of prominent postero-angular setae of which the outer is much shorter than the inner *yii* sp.n.
- . Antennal segments III and IV with sensorium transverse around apex (Fig. 3); antennal segment III less than 2.0 times as long as wide; pronotum with only one pair of prominent postero-angular setae 2
2. Pronotum medially with prominent longitudinal sculpture lines that converge medially forming an hour-glass shape (Fig. 5) *morgani*
- . Pronotum with no sculpture lines medially, with a few transverse lines near posterior margin *floridensis*

Merothrips floridensis Watson (Figs 1–4)

Female macroptera or aptera. Body pale, except head brown; all legs and fore wings pale; all antennal segments brown, except segment II pale. Head longer than wide; ocellar setae III situated in front of hind ocellus, long and setaceous; pronotum trapezoidal, largely smooth but posterior area with a few striate lines, one pair of long posteroangular setae; mesonotum and metanotum with sculpture lines; mesosternum and metasternum endofurca with spinula; all tergites with transverse sculpture lines, tergite X with large trichobothria.

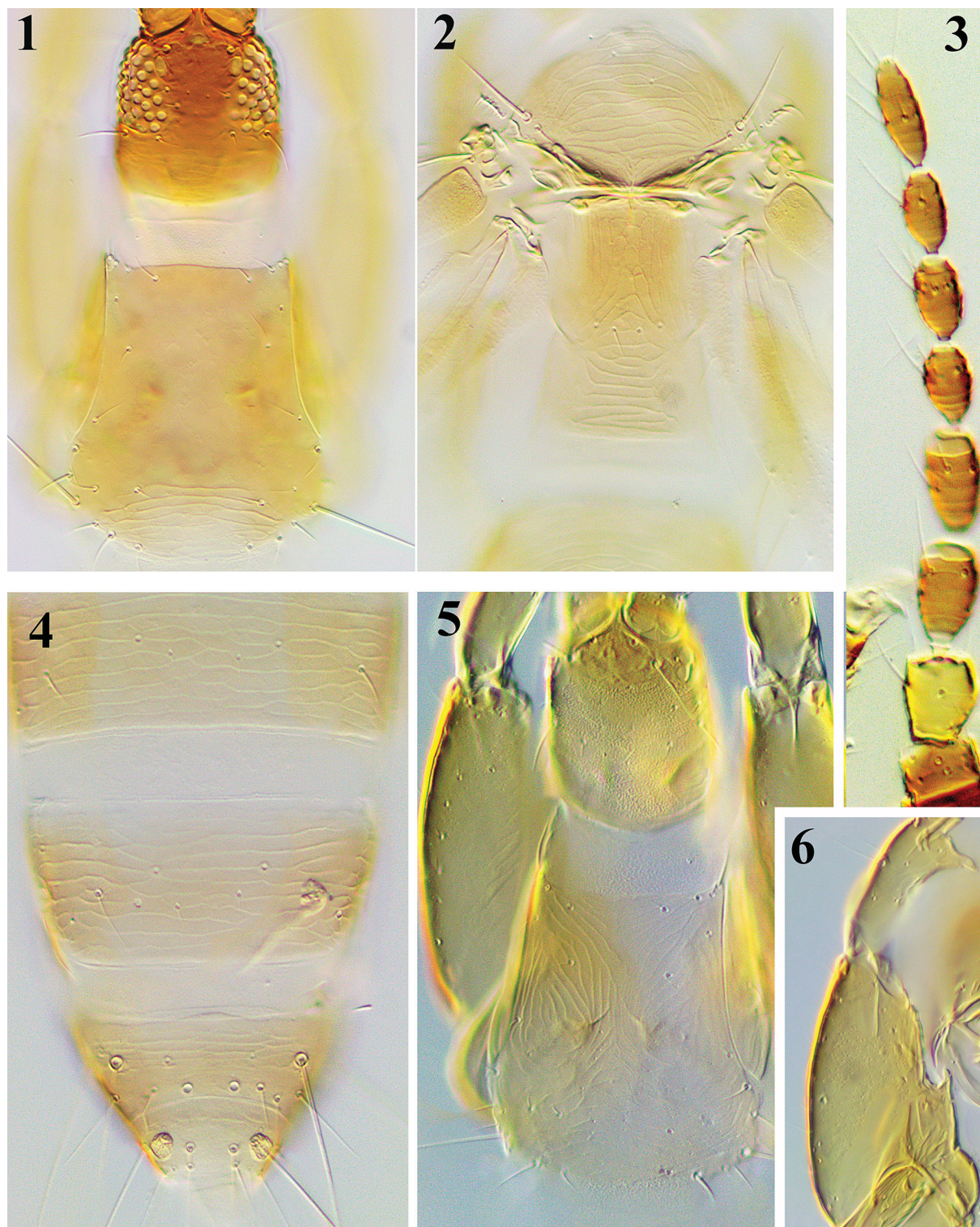
Males are apterous and exhibit enlarged fore legs, sometimes with pointed tubercle at inner apex of tibia.

Comments. This species is widely recorded around the world (Mound & O'Neill 1974), having been seen from many sites in North and South America, Hawaii, Japan, Australia, southern Africa, and southern Europe.

Specimens examined: Peninsular Malaysia, Selangor, Cyberjaya, 1 female macroptera 28.xii.2013 (Ng, Y.F.); Peninsular Malaysia, Pahang, Tasik Chini, 1 female macroptera 12.v.2014 (Ng, Y.F.) (in CISUKM)

***Merothrips morgani* Hood (Figs 5–6)**

Male apterous. Body uniformly pale. Head longer than wide; eyes reduced; without ocelli; ocellar setae III long and setaceous; vertex largely eroded; fore legs enlarged with one stout tooth on the inner margin of femora; pronotum trapezoidal, with converging longitudinal lines medially, one pair of long posteroangular setae; mesosternum and metasternum endofurca with well developed spinula; mesonotum, metanotum and abdominal segments with smooth sculpture or a few very weak lines.



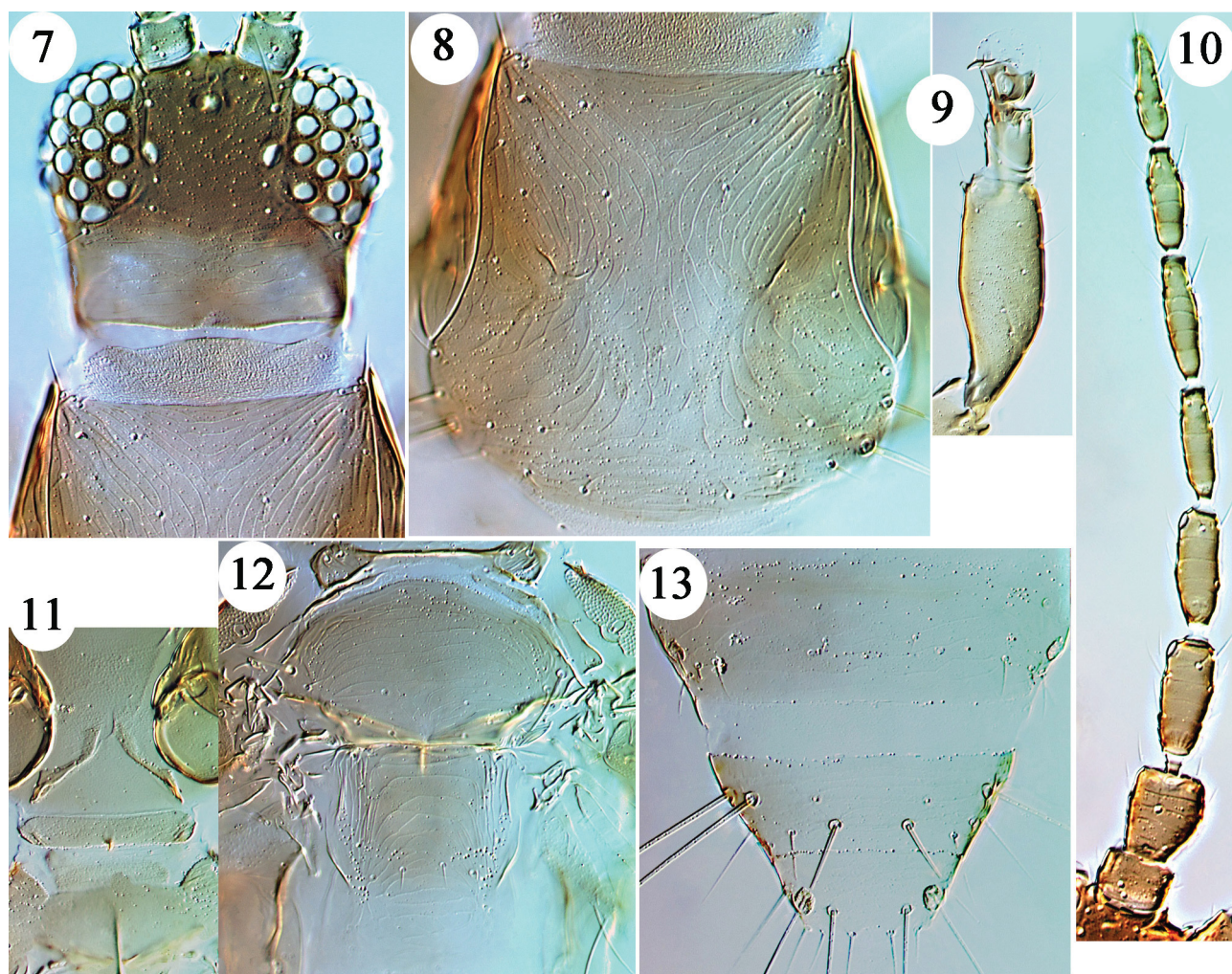
FIGURES 1–6. *Merothrips* species. *M. floridensis* (female) 1–4: (1) head & pronotum; (2) meso & metanotum; (3) antenna; (4) abdominal segments VIII–X. *M. morgani* (male) 5–6: (5) head & pronotum; (6) fore leg (right).

Comments. This species is known mainly from eastern North America (Mound & O'Neill 1974), although a few individuals have been recorded from Panama, Hawaii, Australia and India, and a single male specimen is here recorded from Malaysia. In both sexes the pronotum bears strong lines of sculpture that form an hour-glass shape (Fig. 5; see also Figs 8 & 10 in Mound & O'Neill, 1974). In contrast, the sculpture lines of the new species described below are both considerably weaker and more extensive.

Specimens examined: Peninsular Malaysia, Kuala Lumpur, Templer Park, 1 male from fern, 3.viii.2012 (Ng, Y.F.)

***Merothrips yii* sp.n. (Figs 7–13)**

Female macroptera. Body and legs brownish yellow with abdomen palest, head brown, antennae light brown with distal segments palest; fore wings pale. Antennae 8-segmented (Fig. 10), sensoria on III and IV discoidal, V–VII only weakly narrowed to apex with setae small and slender and no surface microtrichia. Head (Fig. 7) with large eyes, ocelli small, ocellar setae pairs I and II minute, III long and arising laterally; postocular setae no longer than diameter of an eye facet. Pronotum with prominent sculpture lines (Fig. 8); posterior margin with five pairs of setae, of which two are prominent postero-angular setae with the outer much shorter than the inner pair. Prosternum with basantra membranous (Fig. 11), ferna long and curved, propinasternum transverse. Fore femur moderately swollen, fore tibia with small tubercle near inner apex, fore tarsal pulvillus with terminal claw (Fig. 9). Mesonotum without campaniform sensilla, lateral setae long (Fig. 12); metanotal median setae small, close to posterior margin, one pair of posterolateral campaniform sensilla. Fore wing first and second veins each with about 8 widely spaced setae, basal stem of second vein with one seta basal to vein fork; clavus without setae. Hind femora greatly swollen, diameter twice that of mid femora. Abdominal tergites with seta S2 placed close to lateral group of three setae; X with paired trichobothria larger than spiracles on VIII (Fig. 13); sternite VIII similar to congeners with paired lobes each bearing two setae; ovipositor weak, without serrations.



FIGURES 7–13. *Merothrips yii* sp.n. (7) head; (8) pronotum; (9) fore tibia & tarsus (right); (10) antenna; (11) prosternites; (12) meso & metanota; (13) tergites VIII–X.

Measurements (holotype female in microns). Body length 1350. Head, length 105; width across eyes 135; ocellar setae III 50. Pronotum, length 150; posteromarginal setae S4 & S5 75, 25. Mesonotal lateral setae 40. Fore wing length 600. Tergite X trichobothrial seta 130. Antennal segments III–VIII length 45, 40, 40, 45, 35, 37.

Specimen examined. Holotype female macroptera, **Peninsular Malaysia**, Selangor, Templar Park, from a fern, 2.viii.2012 (Ng.Y.F.), in the Natural History Museum, London.

Comments. This species cannot be placed within the key to species provided by Mound and O'Neill (1974). The pronotum has two pairs of prominent posteroangular setae, but the outer pair is much less than 50 microns long. The pronotal sculpture is similar only to that of *fusciceps* Hood (see Fig. 4 in Mound & O'Neill, 1974), but in that species the postocular part of the head is remarkably short, and the anterior margin of the pronotum eroded. The form of the head suggests that it is possibly related to *mirus* Crawford, and the chaetotaxy of the tergites is the same as that illustrated for the *mirus* macroptera (Mound & O'Neill 1974; Fig. 16). From *mirus* it differs as follows: pronotum with only one pair of long posteroangular setae, antennal segments V and VI not weakly vase-shaped with long dark setae, sensoria on antennal segments III and IV small and discoidal. The sensoria of macropterae of *mirus* are large and wrap around half of the apex of their segment, although the sensoria of specimens identified as apterae of *mirus* are small and discoidal.

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